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a patent (Rule 4.17(ii)) for the following designations AE,  
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES,  
FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG,  
MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU,  
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UZ, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS,  
MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent  
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— as to the applicant's entitlement to claim the priority of the  
earlier application (Rule 4.17(iii)) for the following design-  
ations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY,  
BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC,  
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For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

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GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent

(54) Title: IMPROVEMENT OF AROMA-CONTAINING COMPONENTS

(57) Abstract: The aroma-improving agent is present with the aroma-containing component, such as chocolate, cocoa, tea or coffee, in an amount effective to chemically interact with aroma compounds to form an improved aroma-containing component which: (a) enhance a significant portion of one or more of the desirable flavor or sensory characteristics of the aroma in the aroma-containing component; or (b) reduces one or more non-desirable flavor and sensory characteristics. The aroma-improving agent preferably is a nucleophile that contains sulfur or nitrogen, such as sulfur dioxide, sulfites, substances that contain or generate sulfite, thiols, amines or amino acids.



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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02/03027

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A23F5/46 A23F5/24 A23L1/22 A23L1/234 A23L3/34  
 A23L3/3526 A23L3/3535

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A23F A23L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, MEDLINE, FSTA

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 934 702 A (NESTLE SA) 11 August 1999 (1999-08-11)  page 3 -page 4; claims; examples	6,9,11, 14-17, 20-24
X	EP 0 963 706 A (NESTLE SA) 15 December 1999 (1999-12-15)  page 2, line 19 - line 55; claims 1-10; example 1; table 3	6,7,9, 11, 14-17, 20-24
X	US 3 421 906 A (REICH ISMAR M ET AL) 14 January 1969 (1969-01-14)  column 1 -column 2; claims 1,2; examples I-III	6,9,11, 13-17, 21-24
	-/-	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*&\* document member of the same patent family

Date of the actual completion of the international search

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24/10/2002

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## INTERNATIONAL SEARCH REPORT

Int. Application No.  
PCT/EP 02/03027

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 540 889 A (CLINTON WILLIAM P ET AL) 17 November 1970 (1970-11-17) cited in the application column 2, line 12 - line 47; claims 1-9; examples 1-4 ---	6,9,11, 14-17, 21-24
X	US 4 378 380 A (SCARPELLINO RICHARD J ET AL) 29 March 1983 (1983-03-29)  claims 1,8; examples 1,2 ---	6,9,11, 14-17, 21-24
X	DATABASE WPI Section Ch, Week 198825 Derwent Publications Ltd., London, GB; Class D13, AN 1988-169864 XP002215838 & HU 44 914 A (TIMAR G), 30 May 1988 (1988-05-30) abstract ---	9,14,15, 21-24
X	DATABASE WPI Section Ch, Week 199641 Derwent Publications Ltd., London, GB; Class D13, AN 1996-405953 XP002215548 & JP 08 196212 A (NIKKEN FOOD KK), 6 August 1996 (1996-08-06) cited in the application abstract ---	6,7,9, 14-16
X	DATABASE WPI Section Ch, Week 200032 Derwent Publications Ltd., London, GB; Class D13, AN 2000-369397 XP002215839 & JP 2000 116364 A (TAKARA SHUZO CO LTD), 25 April 2000 (2000-04-25) abstract & PATENT ABSTRACTS OF JAPAN , 29 September 2000 (2000-09-29) & JP 2000 116364 A (TAKARA SHUZO CO LTD) abstract -----	6,7,16, 17

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 02/03027

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 1-5, 8, 18-20  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-5, 8, 18-20

Present claims 1-5, 8 and 18-20 relate to an extremely large number of possible methods respectively compounds.

Moreover, afore-noted claims relate to methods and compounds part of which are defined by reference to a desirable characteristic or property, namely using or comprising agents which chemically interact with compounds associated to the aroma-containing component such as to increase the amount of desirable flavour or sensory compounds or reduce the amount of compounds responsible for undesirable flavour or sensory characteristics.

The claims cover all methods and products having this characteristic or property.

The application however, provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very *limited number of such methods and/or compounds*. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the methods and compounds by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to methods for preparing a coffee-aroma-containing component or aroma-containing components which aroma is improved by the addition of precisely defined aroma-improving agents.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02/03027

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EP 0934702	A	11-08-1999	US 6093436 A	25-07-2000
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